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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,170	03/25/2004	Daniel Lee Carter	2003-0781.03	6818

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EXAMINER

ROTH, LAURA K

ART UNIT	PAPER NUMBER
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2852

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/809,170

Applicant(s)

CARTER ET AL.

Examiner

Laura K. Roth

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "first direction" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. (US Pub. 2004/0037601) in view of Murata (US Pub. 2003/0081962).

Regarding claim 1, Uchida et al. (US Pub. 2004/0037601) teach a method of operating a fuser unit for duplex printing, comprising: providing a hot roll and a backup roll in nipped relation (fig.2, #18), and a drive system including a drive motor (fig.2, #M4) for causing the rotation of the rolls; operating the motor at a first process speed in a first direction for advancing media between the hot roll and backup roll for fusing an image on a first side of the media (para.0057, ln.1-4); reversing the direction of operation of the motor to begin duplex routing of the media by operating the motor in an opposite direction from the first direction (para.0057, ln.4-7); re-reversing the direction of operation of the motor while media is routed back to the nip formed between the hot roll and the backup roll (para.0057, ln.1-4; and fig.2, paper paths: though not distinctly stated, the rollers would have to be re-reversed to deliver the paper to the discharge tray when it re-enters the fixer, otherwise a jam would be caused).

Regarding claim 5, Uchida et al. (US Pub. 2004/0037601) teach said fuser being operated in a one-image mode (fig.9: only one sheet fed during a duplex process).

However, Uchida et al. (US Pub. 2004/0037601) fail to teach the motor operating at a speed greater than the first speed.

Regarding claim 1, Murata (US Pub. 2003/0081962) teaches operating the motor at a speed greater than the first process speed for a time while routing the media to the nip formed between the hot roll and the backup roll (para.0053).

Regarding claim 3, Murata (US Pub. 2003/0081962) said fuser having a second process speed greater than the first process speed (para.0053), and said step of operating the motor at a speed greater than the first speed being performed by operating the motor at the second process speed (para.0043, if the rotational speed increases, the motor is operated at a second speed).

Regarding claim 10, Murata (US Pub. 2003/0081962) teach including preheating the backup roll before said step of operating the motor at a first process speed in a first direction for advancing media between the hot roll and backup roll for fusing an image on a first side of the media (para.0067).

Regarding claim 11, Murata (US Pub. 2003/0081962) teach said preheating performed by rotating the hot roll and the backup roll at greater than the first process speed (para.0067).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the fixing unit of Uchida et al. (US Pub. 2004/0037601) with the faster roller heating rotational controls of Murata (US Pub. 2003/0081962) in order to

reheat the backup roller in a quick and efficient manner (para.0050) and to thereby prevent defective fixing (para.0006).

Additionally, Uchida et al. (US Pub. 2004/0037601) and Murata (US Pub. 2003/0081962) both fail to explicitly teach a greater speed being about twice the first process speed.

Regarding claims 2, 4, and 6, Murata (US Pub. 2003/0081962) teaches the rotational speed being changed in such a way that the rollers can reach the predetermined temperature in an efficient manner for reliable fixing (para.0057).

Though twice the speed is not explicitly taught, the Office believes, in view of *In re Aller*, (220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955)), that the velocities set forth in the claims are optimum workable velocities discovered by experimentation and that the applicant shows no evidence that the specified values are critical.

Claims 12-14 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. (US Pub. 2004/0037601) in view of Murata (US Pub. 2003/0081962).

Regarding claim 12, Uchida et al. (US Pub. 2004/0037601) teach a method of operating a fuser unit for duplex printing, comprising: providing a hot roll and a backup roll in nipped relation (fig.2, #18), and a drive system including a drive motor (fig.2, #M4) for causing the rotation of the rolls; operating the motor at a first process speed in a first direction for advancing media between the hot roll and backup roll for fusing an image on a first side of the media (para.0057, ln.1-4).

Regarding claim 17, Uchida et al. (US Pub. 2004/0037601) teach said fuser being operated in a one-image mode (fig.9: only one sheet fed during a duplex process).

However, Uchida et al. (US Pub. 2004/0037601) fail to teach stopping and resuming the operation of the fuser rollers or the motor operating at a speed greater than the first speed.

Regarding claim 12, Murata (US Pub. 2003/0081962) teaches stopping rotation of the hot roll and the backup roll after fusing an image on a first side of the media (fig.11, after fixing, rollers are stopped – second interval); resuming rotation of the hot roll and the backup roll before advancing the media between the hot roll and the backup roll for fusing an image (fig.11, pre-rotation mode); and operating the motor at a speed greater than the first process speed for a time while routing the media to the nip formed between the hot roll and the backup roll (para.0053).

Regarding claim 18, Murata (US Pub. 2003/0081962) teaches including preheating the backup roll before said step of operating the motor at a first process speed in a first direction for advancing media between the hot roll and backup roll for fusing an image on a first side of the media (para.0067).

Regarding claim 19, Murata (US Pub. 2003/0081962) teach said preheating performed by rotating the hot roll and the backup roll at greater than the first process speed (para.0067).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the fixing unit of Uchida et al. (US Pub. 2004/0037601) with the

standby mode and heating roller rotational controls of Murata (US Pub. 2003/0081962) to allow the apparatus to be more energy efficient by preventing the unnecessary driving of the rollers during non-fixing time.

It would have been further obvious to one of ordinary skill in the art at the time of invention to modify the fixing unit of Uchida et al. (US Pub. 2004/0037601) with the faster roller heating rotational controls of Murata (US Pub. 2003/0081962) in order to reheat the backup roller in a quick and efficient manner (para.0050) and to thereby prevent defective fixing (para.0006).

Additionally, regarding claim 14, Uchida et al. (US Pub. 2004/0037601) teach said fuser being operated in a one-image mode (fig.9: only one sheet fed during a duplex process).

However, Uchida et al. (US Pub. 2004/0037601) and Murata (US Pub. 2003/0081962) fail to explicitly teach a greater speed being about twice the first process speed.

Regarding claim 13, Murata (US Pub. 2003/0081962) teaches the rotational speed being changed in such a way that the rollers can reach the predetermined temperature in an efficient manner for reliable fixing (para.0057).

Though twice the speed is not explicitly taught, the Office believes, in view of *In re Aller*, (220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955)), that the ranges set forth in the claims are optimum workable ranges discovered by experimentation and that the applicant shows no evidence that the specified values are critical.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. (US Pub. 2004/0037601) in view of Murata (US Pub. 2003/0081962) and in view of Horrall et al. (US 6,253,046).

Regarding claim 20, Uchida et al. (US Pub. 2004/0037601) teach a method of operating a fuser unit for duplex printing, comprising: providing a hot roll and a backup roll in nipped relation (fig.2, #18), and a drive system including a drive motor (fig.2, #M4) for causing the rotation of the rolls; operating the motor at a first process speed in a first direction for advancing media between the hot roll and backup roll for fusing an image on a first side of the media (para.0057, ln.1-4).

However, Uchida et al. (US Pub. 2004/0037601) fail to teach a drive train, disengaging the hot roll from the drive train or the motor operating at a speed greater than the first speed.

Regarding claim 20, Murata (US Pub. 2003/0081962) teaches operating the motor at a speed greater than the first process speed for a time while routing the media to the nip formed between the hot roll and the backup roll (para.0053).

It would have been further obvious to one of ordinary skill in the art at the time of invention to modify the fixing unit of Uchida et al. (US Pub. 2004/0037601) with the faster roller heating rotational controls of Murata (US Pub. 2003/0081962) in order to reheat the backup roller in a quick and efficient manner (para.0050) and to thereby prevent defective fixing (para.0006).

Regarding claim 20, Horrall et al. (US 6,253,046) teach a fuser unit with a drive train (fig.1, #44, #64, #66 and #72; also, #74, #76, #78, #80, and #82) and disengaging

the hot roll from the drive train after fusing an image on a first side of the media (fig.2, gear #72 on drive train is removed from contact with grouping #42); re-engaging the hot roll with the drive train before advancing the media between the hot roll and the backup roll (col.8, ln.40-43).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the fuser apparatus of Uchida et al. (US Pub. 2004/0037601) with the disengagement and pressure release features of Horrall et al. (US 6,253,046) in order to prevent compression set of the hot and backup rollers by disengaging them between fixing operations (col.2, ln.64-col.3, ln.8).

Additionally, Uchida et al. (US Pub. 2004/0037601) and Murata (US Pub. 2003/0081962) both fail to explicitly teach a greater speed being about twice the first process speed.

Regarding claim 21, Murata (US Pub. 2003/0081962) teaches the rotational speed being changed in such a way that the rollers can reach the predetermined temperature in an efficient manner for reliable fixing (para.0057).

Though twice the speed is not explicitly taught, the Office believes, in view of *In re Aller*, (220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955)), that the ranges set forth in the claims are optimum workable ranges discovered by experimentation and that the applicant shows no evidence that the specified values are critical.

Claims 7, 8, 9, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. (US Pub. 2004/0037601) in view of Murata (US Pub.

2003/0081962) as applied to claims 1,5, and 12 above, and further in view of Yoshioka (US 5,659,846).

Uchida et al. (US Pub. 2004/0037601) in view of Murata (US Pub. 2003/0081962) teach all of the limitations of claims 1, 5, and 12 (upon which claims 7, 8, and 12 depend).

However, Uchida et al. (US Pub. 2004/0037601) in view of Murata (US Pub. 2003/0081962) fail to teach an additional step of stopping the media during duplex routing or the fuser operating in a two-image mode.

Regarding claim 7, Yoshioka (US 5,659,846) teaches including a step of stopping the media during duplex routing (col.7, ln.52-58).

Regarding claims 1 and 12, Yoshioka (US 5,659,846) teaches said fuser being operated in a two-image mode (col.7, ln.52-65: entire apparatus is being operated in a mode in which two images are being processed back to back).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Uchida et al. (US Pub. 2004/0037601) in view of Murata (US Pub. 2003/0081962) to incorporate the intermediate sheet storage and two-image mode of Yoshioka (US 5,659,846) to allow the user greater flexibility of duplex printing option by allowing the user to print more than one copy of a media at a given time and allowing a variety of duplex printing options that are otherwise unavailable with the one-image printing (col.7, ln.45-51).

Additionally, Uchida et al. (US Pub. 2004/0037601), Murata (US Pub. 2003/0081962) and Yoshioka (US 5,659,846) all fail to explicitly teach a greater speed being about twice the first process speed.

Regarding claims 9 and 16, Murata (US Pub. 2003/0081962) teaches the rotational speed being changed in such a way that the rollers can reach the predetermined temperature in an efficient manner for reliable fixing (para.0057).

Though twice the speed is not explicitly taught, the Office believes, in view of *In re Aller*, (220 F.2d 454, 456, 105 USPQ 233, 235(CCPA 1955)), that the ranges set forth in the claims are optimum workable ranges discovered by experimentation and that the applicant shows no evidence that the specified values are critical.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Watabe (US Pub. 2005/0025511) fuser controls for a duplex image forming apparatus wherein the fixing rollers are separable, and wherein the rollers are operated in a stopped mode and a reverse mode; however, the invention was filed after the filing of the applicants' invention.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura K. Roth whose telephone number is (571)272-2154. The examiner can normally be reached on Monday-Friday, 7:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur T. Grimley can be reached on (571)272-2136. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LKR
2/21/2006

A handwritten signature in black ink, appearing to read 'Arthur T. Grimley', with a long horizontal flourish extending to the right.

Arthur T. Grimley
Supervisory Patent Examiner
Technology Center 2800